

**ABSTRACT**

It is disclosed a method of measuring the thickness and/or the depletion of Al and Cr of a  $\gamma/\gamma'$  MCrAlY-coating after the use in a high temperature environment, the  $\gamma/\gamma'$  MCrAlY-coating (6) exhibiting a non-equilibrium  $\gamma/\gamma'$ -microstructure at a temperature lower than the temperature during operation. Before the coating (6) conductivity by means of a multifrequency eddy current system is measured a heat treatment is applied to transform the non-equilibrium  $\gamma/\gamma'$ -microstructure to a equilibrium microstructure having a  $\alpha$ -Cr phase. Subsequently the Al and/or Cr depletion of the coating (6) from the coating conductivity and permeability is determined.

(Fig. 1)